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## September 2006

### Issue #9

This newsletter is sent out to all who have called in on the AWA net and who have email facility, and those who have paid for mail envelopes, with the hopes that it will encourage you to call in again and help to keep the AWA net alive and well.

Should you not want to receive any further publications of this newsletter, drop me a note and I will take you off the mailing list. Should you prefer to receive a hard copy via snail mail, please send an SASE for the period you would like to receive these and I will process for you.

### **Happenings:**

Anyone still interested in having a lapel badge, same as the logo at the top of this page, can get hold of Cliff by email at [csmyth@altron.co.za](mailto:csmyth@altron.co.za) to place an order with him. The cost involved is R22 per badge, PLUS R6.00 postage. The bag used for postage can take up to 12 badges, so order a few and save on postage.

Cliff's banking details are as follows:

ABSA branch code 515-205 (Northgate) account C.J. Smyth. Number 0711107967. Use your call sign as a reference number.

**ZS0AWA/CW.**



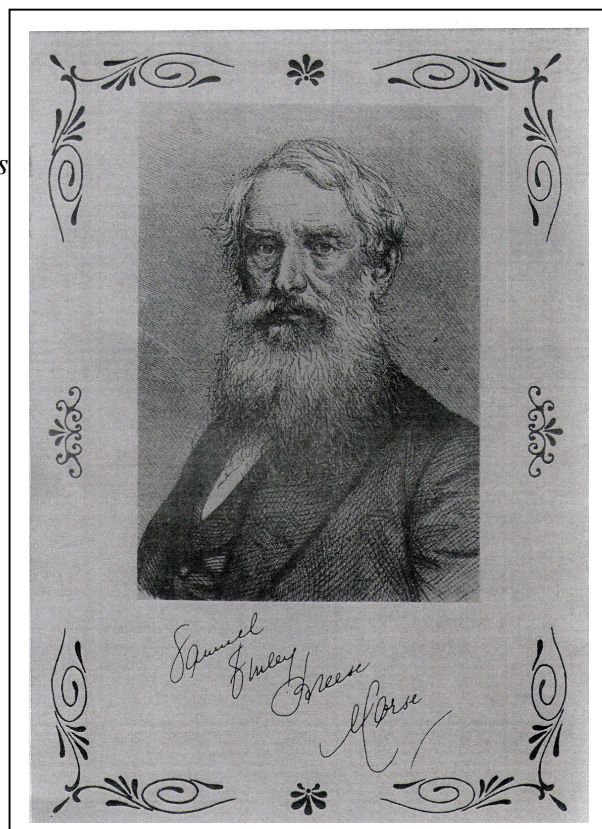
The CW net continues along with very little activity over the past month. Regulars have been Barrie ZS6AJY, Ben ZS5SIB and Ian ZS5IAN. Band conditions continue to plague us, but we still keep the air waves warm with a bit of RF on Saturday afternoons at 14:00 SAST. The net is run at 12 wpm and so should meet the needs of all interested in CW. 7020 is the frequency.

## **THE FIRST MORSE LINE.**

*On 3 March 1843, the US congress finally approved a grant of \$30,000 to test the electromagnetic telegraph. Prof. Morse was 52 years old. Behind him were years of disappointments, frustration and poverty. Ahead of him was the construction of a 40 mile wire along the railway running from Washington to Baltimore, a task new to those undertaking it, requiring techniques, equipment and materials which, in some case did not yet exist.*

*Morse was appointed Superintendent of Telegraphs at a salary of \$2000 a year. Professors Fisher and Gale were assistant superintendents, at \$1500, and Alfred Vail an assistant superintendent at \$1000.*

*Fisher, who had helped with earlier experiments, was to supervise the manufacture of the wire, and it's insulation and insertion in to lead pipes. Gale's scientific knowledge was to be placed at the disposal of the project whenever required. Vail was to superintend the making of the instruments, batteries, etc, and F.O.J. Smith, Morse's fourth partner, was to secure a favourable contract for the trenching required to run the wire underground.*



### **Nepotism.**

*For the first few months all went well. Several contracts were placed with costs considerably less than estimated and Morse grew hopeful of early completion well within the sum allocated by congress. Problems then arose over the contract price for the trenching which, disturbingly, was exactly that estimated by Morse. It transpired that Smith had placed the contract with his brother-in-law, and the difference of opinion between Morse and Smith over this matter was the beginning of an ever-widening gulf between them.*

*Superintending the trenching for the contractor was Ezra Cornell, later founder and chief benefactor of Cornell University. He is reputed to have invented the plough, pulled by eight mules, which dug the trench, laid the cable and filled the trench again, all in one operation. When the work finally started he was able to lay the line so quickly the manufacturers could not keep up with him.*

*After nine miles had been laid, it was found that the pipe-encased wire had faulty insulation caused by heat in the manufacturing process. Professor Fisher, responsible for supervising manufacture, and for testing the finished product, was dismissed and at the same time Gale resigned due to ill health. With just himself and Alfred Vail left to superintend the work, Morse was in despair. He had planned an underground line believing that Cooke and Wheatstone's system in England had successfully used buried conductors.*

### **Overhead Wires**

*Vail and Cornell urgently read all the literature they could find about the European telegraphs and discovered that the English underground wires had also been a failure and had been replaced by overhead wires on poles. Cornell was then appointed as a mechanical assistant to Morse at \$1000 a year, taking responsibility for constructing the line, and his enthusiasm, energy and ability became a major factor in it's final completion.*

*By April 1844, poles 24ft high, 200ft apart were extending along the railroad. Good progress was again being made, with Morse telegraphing his assistants and receiving replies 'within seconds'. The insulation of the overhead wires where they were attached to the poles caused problems, but Cornell devised an economical solution using readily available glass doorknobs.*

*With everyone working under great pressure, the wires reached Annapolis Junction, 22 miles from Washington, on May 1, in time to pick up news from the railway of the proceedings of the Whig national convention at Baltimore. News of the convention's nominations for president and vice-president were flashed to Washington an hour before the train bearing the news reached there, enabling Morse to give that city a foretaste of what was to come.*

### **Things Went Well Today**

*On the day before the convention, he wrote to Vail, 'Get everything ready in the morning... When you learn the name of the candidate see if you cannot give it to me ...before the rail car leaves you ...'*

*Next day he wrote, 'Things went well today. Your last writing was good. You did not correct your error of running your letters together until some time. Better be deliberate...I may have some of the Cabinet tomorrow... Get from the passengers in the cars from Baltimore, or elsewhere, all the news you can transmit...' Finally, the line from Washington to Baltimore was completed and, on 24 May 1844, all was ready for the first official demonstration of the Morse telegraph. Annie Ellsworth handed Morse the first words to be sent – and the rest is history!*

### **Incredulous**

*On May 26, the Democratic convention met in Baltimore and Morse was able to relay news direct from the convention to Washington, another opportunity to demonstrate the potential of his telegraph. Vail and Cornell had their instruments at the railway station in Baltimore, while Morse was located in a room below the Senate Chambers in Washington.*

*There were nine ballots for the presidential nomination, all reported faithfully and instantly by Vail. Excitement rose to a crescendo in Washington as the news came in to Morse's office and a little known outsider, James K. Polk, finally received the almost unanimous support of the convention for his candidature.*

*The same Procedure followed the vice-presidential nomination, but this time the nominee, Senator Silas Wright was not at the convention, but in Washington. Vail telegraphed details to Morse who passed them on to the Senator. Wright declined the nomination and asked Morse to send his decision to an incredulous convention, which received his reply only minutes after nomination.*

### **First Conference by Wire**

*They telegraphed again, received the same reply and, unsure of the accuracy of the new telegraph, sent a decision by train to Washington to make sure they had received the message correctly.*

*In Baltimore, having received confirmation of the accuracy of the telegraph message, a committee of the conference sat with Vail at his instrument while Wright joined Morse in Washington in private session. Via the new telegraph, the committee told Wright the reasons why he should accept the vice-presidential nomination. In return he explained his reasons for declining and this first long distance telegraph conference continued until the committee was finally convinced that Wright would not accept.*

*Thus the Morse telegraph became a reality. Soon its wires and facilities would spread across North America and then around the world overtaking or replacing, in its day, all other systems. The age of telecommunications had begun.*

*Reproduced with kind permission of Morsum Magnificat Magazine.*

### **AM Net:**

AM call in at 09:15 on Saturday morning has been abandoned until some improvement happens in the bands. With conditions being the way they are and also having the 40/80 relay, we have decided it would be better this way.

The AM group on Wednesday evenings has been plagued with similar problems although not as consistent on 80m. The band goes out sometimes before the net even has a chance to get going, and then opens up again after a short while. There have been some fairly good contacts on 80m AM during the month.

Please come up and join us if you have the time and the inclination. 19:30 Wednesday evenings on 3615.

### SSB Net:

The 40/80m relay is up and working and certainly makes for calling in on frequency a lot easier. Div 5&6 have been operating on 80 with a relay on to 40 and then Div 1,2 & Z22 coming in on 40 being relayed to 80m. I am sure you will all agree that it makes life a lot easier and seems to keep Om Willem happy running the net this way. At least he is able to hear all stations now.

I am sure you will all agree with me that Willem has done an outstanding job as net controller for the AWA so far and we all appreciate his efforts.

We appeal to all of you, when calling in on 40m, should you not be able to hear the control station, please try 80m if you are able to. Otherwise we have people doubling and it really does make life difficult.

## Central Electronics

CENTRAL ELECTRONICS MULTIPHASE  
SINGLE SIDEBAND EXCITERS



MODEL 10B EXCITER KIT.  
10 watts peak output. Net \$129.50.  
Wired and tested. Net \$179.50.



MODEL 20A EXCITER KIT.  
20 watts peak output. Net \$199.50.  
Wired and tested. Net \$249.50.

Central Electronics was started by Wes Schum, in the proverbial Chicago basement, in 1950. At the time, it was about the only company concentrating on advanced, phasing-type, SSB exciters for hams. The first one, the ten-watt (PEP) 10A, used a string of receiving tubes on all bands 160 to 10, derating power somewhat at the high end.

The 10A improved on an earlier product, from another company, that was called the SSB Junior. Your occasional 10A turns up at swap meets. It has no VFO, just crystals, and bandswitching is done by opening up a little door and changing coils. It's in a funky little grey box, with MULTIPHASE EXCITER in large letters across half the left side of the radio, flanking two sine waves that are most definitely 90 degrees out of phase.

The 10A was followed in 1954 by an improved version, the 10B, in a slightly larger box, and the 20A, a higher-powered version with more features. It has a band switch, and at the top there is a magic-eye tube. There is an accessory VFO, the 458, though converted surplus VFOs were used as well.

The Central Electronics transmitters that everyone wants today are the later 100V and 200V. These are classics,

perhaps as close to the state of the vacuum-tube art as anything made. For a start, the rig is completely broadbanded, like a no-tune ricebox of today. That's right. You don't have to tune your transmitter. Of course, this means that the load must be pretty close



to 50-75 ohms, as with modern rigs. I suppose you could use an antenna tuner, and lose a bit on the convenience side.

The PA, using the ultra-linear 6550 audio tubes in class AB1, is rated at 100W PEP on both radios. The CE200V is a somewhat later version of the 100V, with the same basic design but a lot of new tubes and features, giving it just about every bell and whistle anyone ever put into a tube transmitter.

Both the 100V and 200V come in a heavy, impressive box, classic Collins grey, with a simplified control layout of two knobs, a turret dial, and two knobs. Other controls are behind two sturdy, spring-loaded doors. They're pretty much all set-and-forget. There's also an accessory signal analyzer scope in a matching box.



The PTO has a very fine tuning step for a tube radio. To its left is a large meter, to its right a nifty modulation 'scope. This rig cost \$800 in 1950s money, more than a lot of used cars, and you still needed a receiver. It was probably worth it, though. People will hock their children for these now. It's a great rig, if not one for the faint hearted. It's probably hell to work on, but it's a thing of beauty.

At the time, the broadband coupler in the PA output circuit was regarded as black magic. Engineers for other companies would open up their 200Vs and try to see what made these couplers work. CE, however, had potted the whole thing in what looked a bit like dirty cement, requiring its total destruction to get to the guts. One was rewarded by a few bent, useless coils, which by then looked as if a car had run them over. There must have been a few 200Vs around with permanently tuned outputs, since CE would not replace these couplers without a darn good reason.

Finally, there was a matching desktop linear, the 600L, with a single 813 in class AB2 running about 600W PEP. Yes, this was broadband too, in and out. You still didn't tune your radio. Think about these beautiful tube rigs, designed in the late 50s, the next time someone tells you what an advance the no-tune riceboxes were.

In 1959, Central Electronics became wholly owned subsidiary of Zenith, with Schum staying on as a VP. Zenith management probably had trouble relating to such a high-end, low-volume product. These were definitely engineer's radios, and consequently they sold to a niche market.

According to one of my sources, Zenith was really after Central's patents on phase-shift networks. These allowed a great simplification in the chroma demodulators of Zenith TV sets, eliminating four tube sections compared to RCA's design. In 1962, with patent rights firmly in hand, and only about 500 200Vs sold, Zenith abruptly discontinued the entire CE line, terminating it with extreme prejudice. There were wails of grief from hams, but that was that.

**With thanks to the Ominous Valve Company website for the article.**

### **Promotions:**

Things have quietened down now and perhaps this may be a good time to talk about having a swap meet somewhere, with workshops on refurbishing some of the old rigs, flea market for the hard to find bits and pieces, as well as rigs that have been gathering dust, and a chance to destroy some of the ozone by burning some meat on the fire and talking nonsense and propagation.

Seeing as no one came up with any suggestions, what about Saturday 04 November.

Would be interested hear the response to this suggestion.

Should you feel so inclined, send us pictures of your shack that we could have them included in this newsletter.

### **Restoration News:**

I am nearly finished compiling a list of valves that we purchased for the AWA and as soon as it is finished, will circulate it to all on the mailing list. John ZS2J has also sent me a list of valves that he has in stock to add to our list. Should you have any valves you want to donate to the AWA, let me know and we will make arrangements to collect them and add them to the growing list.

### **Shack News:**

Dave - ZS6MUS, sent me this picture of Om Cliff – ZS6BOX at his operating desk when Cliff went to visit him at Swartkops Air Base. Cliff says that Dave really needs some help there with all the restoration work of antique military rigs that he has.



### **Swap Column:**

Any swaps or items for sale in the antique line ? Let me have the details and we will advertise it here.

There is an online swap shop on the website of the Highway Amateur Radio Club for ALL amateurs and interested parties to use - it is not restricted to members only. We have been invited to make use of this facility too. Should you want to, use the link to the HARC at the end of the page to take you to their website.

If you would like to forward this newsletter to any other interested parties, please feel free to do so. Print it out and put in on your club notice board, or give it to someone interested in valve radios. If you know of any who report in on the net but don't have email, print it out and give them a copy.

Net days and times:

Saturday 08:30 SSB net - frequency – 7070Mhz

Saturday 09:15 AM net – frequency 7070Mhz

Saturday 14:00 CW net – frequency 7020Mhz

Wednesday 19:30 AM net – frequency 3615 (-5 for QRM)

This, and past copies of the AWA Newsletter can be downloaded from <http://members.harc.org.za/newsletters/AWA/>. Our thanks to the Highway Amateur Radio Club in Durban (<http://www.harc.org.za>) for providing this service to our members and other interested parties.

Thanks for the bandwidth.

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